DOCUMENT RESUME

ED 022 771 TE 000 681

By-Hayes, Curtis W.

SYNTAX: SOME PRESENT-DAY CONCEPTS.

Pub Date Jan 67

Note-9p.

Journal Cit-English Journal; v56 n1 p89-96 Jan 1967

EDRS Price MF-$0.25 HC-$0.44

Descriptors-ENGLISH INSTRUCTION, KERNEL SENTENCES, LINGUISTICS, PHRASE STRUCTURE, *SENTENCE STRUCTURE, *STRUCTURAL GRAMMAR, *SYNTAX, *TRANSFORMATION GENERATIVE GRAMMAR, TRANSFORMATIONS (LANGUAGE), TRANSFORMATION THEORY (LANGUAGE)

The value of a transformational model of syntax can be illustrated by comparing the taxonomic grammatical description of a complex sentence to a transformation-oriented description of the same sentence. The taxonomic approach, an immediate constituent analysis, requires 10 steps to break the sample sentence into its grammatical components; the transformational approach, incorporating both phrase structure rules and transformational rules, requires three steps to explain the sentence. Because the transformational method allows for generalizations about the process of embedding, it can make more economical statements about syntax. Furthermore, since the transformational theory holds that a finite set of phrase structure rules plus a finite set of transformational rules can explain any sentence, it is linguistically more complete and consistent and, thus, more practical in the classroom than the taxonomic theory which assumes that an infinite set of phrase structure rules is necessary to describe all sentences. (LH)

ED022771

ENGLISH JOURNAL

The Official Journal of the Secondary Section of
National Council of Teachers of English

Editor: RICHARD S. ALM
University of Hawaii

Volume 56 January 1967 Number 1

Matter and Meaning of Motion Pictures	23	*The Rev. J. Paul Carrico, C.S.C.*
The Faculty Club, Wittenberg (Verse)	37	*William F. Gavin*
Reeling in English Class	38	*Sister Mary Labouré Harig, S.N.D.*
Loneliness of the Long Distance Runner: First Film Fare	41	*Sister M. Amanda Ely, O.P.*
Macbeth for the Busy Reader (Verse)	44	*Richard Gaggin*
Aboard the *Narcissus*	45	*Evalee Hart*
An Approach to Teaching *The Secret Sharer*	49	*Marian C. Powell*
The Role of Order and Disorder in *The Long March*	54	*Welles T. Brandriff*
A Letter to J. A. (Verse)	59	*Pansye H. Powell*
The *Weltanschauung* of Steinbeck and Hemingway: An Analysis of Themes	60	*Samuel Scoville*
Miss Brownstone and the Age of Science	64	*John H. Bens*
Helping Students See Their Language Working	67	*W. Wilbur Hatfield*
The Feature System in the Classroom	74	*Keith Schap*
Syntax: Some Present-Day Concepts	89	*Curtis W. Hayes*
Some Usage Forms Die Hard— Thanks to College Entrance Exams	97	*Evelyn Schroth*
Is Composition Obsolete?	100	*Solomon S. Simonson*
Teaching Writing Today— Composition or Decomposition?	103	*Edward Lueders*
Priming the Pump and Controlling the Flow	109	*Vivian Buchan*
How To Write Less Efficiently	114	*Arthur A. Stern*

TE 000 681

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Syntax: Some Present-Day Concepts

Curtis W. Hayes

Department of English
University of Nebraska
Lincoln, Nebraska

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY Curtis W. Hayes and National Council of Teachers of English TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

THE APPEARANCE in 1957 of Noam Chomsky's monograph entitled *Syntactic Structures* (The Hague: Mouton and Co.) divided linguistic science into two schools, sharply divergent. The older of these two, which by now may almost be called the traditional or structural school, traces its origin to 1933, the year of Leonard Bloomfield's monumental *Language*. The newer school, which may be called the MIT, or Chomskyan, school, had its birth in 1958. The Chomskyans maintain that their own system describes human language "as in itself it really is" (to borrow Matthew Arnold's phrase); all competing theories they feel to be unsophisticated, inherently incapable of describing the complexities of language. In a number of fairly recent publications, they have drawn attention to what they feel to be the inadequacies of the older school.[1]

These attacks have taken several paths, but in general the Chomskyans have judged the older grammar (frequently labeled the taxonomic grammar) to be inadequate in its power to describe certain linguistic facts and processes. Chomsky himself, for instance, in one of his more recent publications, argues "that a taxonomic model (or any of its variants within a modern study of language) is far too oversimplified to be able to account for the facts of linguistic structure and that the transformational model of generative grammar is much closer to the truth."[2] In *Syntactic Structures* (pp. 18 ff.), he had argued that the taxonomic grammar was inadequate because it would not generate all the grammatical sentences of a language and only those. Specifically, he held, it would not generate the "nesting" (or self-embedding) properties typical of certain English sentences.

[1]The traditional system is represented by Charles C. Fries, *The Structure of English: An Introduction to the Construction of English Sentences* (New York: Harcourt, Brace and Co., Inc., 1952); George L. Trager and Henry Lee Smith, Jr., *An Outline of English Structure (Studies in Linguistics*, Occasional Papers, No. 3), (Norman, Oklahoma: Battenburg Press, 1951); and Archibald A. Hill, *Introduction to Linguistic Structures: From Sound to Sentence in English* (New York: Harcourt, Brace and Co., Inc., 1958), to mention only a few.

[2]See, for example, Chomsky's paper, "The Logical Basis of Linguistic Theory," which appears in the *Proceedings of the Ninth International Congress of Linguists* (The Hague: Mouton and Co., 1964), pp. 914-1008.

Another member of this school, Paul Postal, discusses in a recent monograph the inadequacies of traditional models of linguistic description.[3] Taxonomic models, according to Postal, cannot account for the intuitively-felt relationships among sentences such as active and passive, interrogative and declarative, assertive and negative, incorporated and non-incorporated. Nor, he adds, can this grammar account for such grammatical processes as the following:

Deletion: XAY ⟶ AY

Substitution: XAY, ZBW ⟶ XBY

Permutation: XAYBZ ⟶ XBYAZ

Adjunction (embedding of constituents):

XAY, ZBW } XABY

THE GENERAL tenet of transformational/generative grammar (i.e., a Chomskyan grammar) is that every adult possesses a relatively few simple sentence patterns (the *kernels*[4]) and a complex set of rules (called transformations) which describe the operations by which he combines and modifies simple sentences into the infinite number of complicated sentences he can produce. The processes of combining and modifying sentences to form even more complex sentences are technically known as transformations. In other words, a speaker learns a finite set of basic sentence patterns together with a finite set of transformational rules. Then, in accordance with these rules, he may construct an infinite number of sentences. This avoids the notion that a human speaker learns to talk by mastering all the complex sentence patterns of his language, each one separately. Take, for instance, the following example:

Union Oil sells oil may be considered a kernel (a base sentence) for further transformations, such as the *passive*:
Oil is sold by Union Oil.
the *negative*:
Union Oil doesn't sell oil.
the *negative/passive*:
Oil isn't sold by Union Oil.
the *interrogative*:
Does Union Oil sell oil?
the *negative/interrogative*:
Doesn't Union Oil sell oil?
the *negative/passive/interrogative*:
Isn't oil sold by Union Oil?

For the linguist (as well as those schooled in logic or mathematics), the above algebra may give rigor, consistency, and exactness to statements about language. But, for the outsider, including perhaps the classroom teacher, these rules may be repellent and thus may have only negligible value in a classroom situation. It is with this difficulty in mind that this paper is written; first, to explain a few of the insights of transformational grammar and how they lead to a complete as well as to a simple view of grammatical processes. And second, to compare a description of a complex sentence provided by a taxonomic grammar and a description of that same sentence using the transformational approach. In the course of this paper, I should like to make more easily understandable the complex equations of the transformational/generative grammar.

WE MAY take this sentence from Harold Whitehall's book, *Structural Essentials of English* (Harcourt, 1956), for analysis:[5]

[3] "Constituent Structure: A Study of Contemporary Models of Syntactic Descriptions," *IJAL*, 30, Part III (January 1964).

[4] The notion of *kernel* perhaps is outmoded in its original definition (i.e. sentences which have had no optional transformations performed on them), yet it is still useful to think of a human speaker as having a set of basic sentences, perhaps kernels, from which he can produce an infinite number of sentences. In this paper the term kernel can be liberalized to include the notion of base sentence.

To sing such songs to a poor old man persuaded of his own approaching death had been a charitable act I had not contemplated.

The traditional or taxonomic linguist, following the rules of immediate constituent analysis, would analyze such a sentence in linear order; that is, he would use a "straight line" approach and would not incorporate a transformational component into his grammar. He would consider all sentences to be capable of being generated (enumerated) by phrase structure rules. The process of analysis then is essentially one of *parsing*. (The term *parsing* is a very old one in grammatical analysis. It is used here, but not in the strictest traditional sense. I do not wish to suggest that immediate constituent analysis and the traditional exercise of parsing are identical. They are similar, and in point of fact IC analysis was an attempt to add rigor to the traditional notion of parsing.) Successive cuts, first into subject-predicate, ultimately into its final constituents, reveal the complexity of the sentence.[6] The sentence (which may be a *string*) divides first into

1. subject: *to sing such songs to a poor old man persuaded of his own approaching death*
   predicate: *had been a charitable act I had not contemplated*

On the second level of analysis the subject divides into a

2. verbal group: *to sing such songs*
   prepositional group: *to a poor old man persuaded of his own approaching death*

The verbal group then parses into a

3. head: *to sing*
   noun group: *such songs* (with *songs* as its head)

The prepositional group parses into a

4. prepositional phrase: *to a poor old man*
   a modifier group: *persuaded of his own approaching death*

To a poor old man can be further subdivided into a

5. preposition: *to*
   the noun group: *a poor old man* (with *man* as its head)

The modifier group *persuaded of his own approaching death* divides into a

6. modifier head: *persuaded*
   prepositional group: *of his own approaching death*

The prepositional group can then be subdivided into a

7. preposition: *of*
   noun group: *his own approaching death* (with *death* as its head)

(This analysis could continue until one reached "ultimate units" [single words], e.g. *approaching:death*).

Whitehall gives the predicate a similar analysis. The predicate first divides into a

8. verb group: *had been* (with *been* as its head)
   complement: *a charitable act I had not contemplated*

The complement divides into a

9. noun group: *a charitable act* (with *act* as its head)

---

[5] The analysis is Whitehall's. In some cases I have rephrased the analysis for clarity. See pp. 17-19.

[6] See Rulon Wells, "Immediate Constituents," *Language*, 23 (1947) 81-117, and Eugene Nida, *A Synopsis of English Syntax*, (Norman, Oklahoma: Summer Institute of Linguistics, University of Oklahoma, 1960). Immediate Constituent analysis is essentially an analysis in which one begins with the largest syntactical unit (subject and predicate) and continues to divide until one reaches single words.

subject-predicate group: *I had not contemplated*

The subject-predicate group then divides into a

10. subject: *I*
predicate: *had not contemplated* (with *contemplated* as its head)

Whitehall observes (p. 18) that "the value of such analyses in depth is that they reveal the Chinese-puzzle intricacy of English utterances without confusing the various levels of grammatical structure. Yet merely to break down the statement into its more obvious groups and to recognize their types is often sufficient to reveal its major grammatical dynamics."

In contrast to this procedure, the transformationalist holds to the notion that complex sentences are the results of processes performed on them. A complex sentence, he would point out, incorporates into its structure two or more basic (source) sentences which have been embedded, added, or nested in to the complex sentence through transformational processes. Basic sentences and only basic sentences are generated by phrase structure rules.

The addition of a transformational component is the transformationalist's main departure from taxonomic theory. Where a taxonomic grammarian would represent any and all sentences with one labeled diagram, the transformationalist would not, saying that this method does not take into account the intuitive notion that some sentences are related to others.[7]

TO COMPREHEND the transformational viewpoint, the reader first should know something about the basic phrase structure rules of that grammar.[8] Phrase structure rules in this grammar generate simple, declarative sentences, such as, *the boy kicked the ball;* and these simple sentences are usually given an abstract representation in the grammar. We will see this below. For our purposes we do not need an exact delineation of these rules; however, the following explication is necessary for a reader to grasp the processes necessary to generate a sentence.

A sentence first is *re-written* (⟶) as *noun phrase* plus *predicate:*

The arrow (⟶) in phrase structure operations mean *consists of*. Thus S *consists of* a noun phrase plus a verb phrase.

S ⟶ NP + pred *(the boy + kicked the ball)*

The predicate is re-written as *auxiliary + verb phrase:*

pred ⟶ aux + VP *(ed + kick the ball)*

The auxiliary, only for our purposes, is re-written as *tense* of verb.

aux ⟶ -te (*-ed*, which is the past tense of the verb *kick*)

The auxiliary may contain other components, and usually does, for example, modals (*may*, *could*, *would*, *should*, etc.); it may also contain a form of *have* plus the past participle inflection (*have walked* or *have ridden*); it may contain a form of *be* plus the *-ing* suffix) (*is walking*). It would be strange and unusual, yet permissible by the rules of English, to have all the above symbols and inflections represented at the same time in

[7] For a discussion of native speaker intuition, see Charles J. Fillmore's review of *Studies in American English: Third Texas Conference on Problems of Linguistic Analysis in English*. This review may be found in *Word*, 20 (1964) 471-487.

[8] For an admirable attempt at explicating Chomsky's notion of grammar, see Paul Olson's paper, "Transformations," which appears in Dudley W. Bailey, ed. *Introductory Language Essays* (New York: W. W. Norton and Co., Inc., 1965).

an English sentence. For example, the sentence, *the boy should have been kicking*, is to my mind an unlikely sentence, but one which at least has a chance of occurring.

For a description of the sentence at hand, we need only to note that the *aux* contains the tense of the verb. One of the most obvious advantages of taking the tense affix and placing it in front of the verb is that it allows the linguist to delete it, a necessary process when creating infinitival nominals, as we will see.

The sentence that Whitehall describes, using the taxonomic approach, is not a simple sentence but is a complex sentence which has been generated from four underlying source sentences. The sentence, in other words, is a composite of two types of source sentences. The matrix (independent) sentence forms the overall pattern of the ultimate sentence. Those sentences which are embedded, nested, or added to the matrix sentence are the constituent (dependent) sentences. This view of matrix and constituent sentence, Robert B. Lees says, "makes essential use of the notion that part of the syntactic structure of a sentence is the set of underlying, sometimes very abstract, representatives of the simple sentences from which it may be said to be derived by explicit grammatical rules called transformations."[9]

In contrast to the procedure of successive cuts which the taxonomist would use, the transformationalist would first *re-write* the textual sentence into simple source sentences. Then the *history* (derivation) of the sentence (an analysis of the transformations which the complex sentence could be assumed to have undergone) can be revealed.

Matrix sentence:
/nominal: it/ had been a charitable act
Source or constituent sentences:
/nominal: he/ -te sing such songs to a poor old man
The man was persuaded of his own approaching death
I had not contemplated the act.

/nominal:it/he/ is a device, a type of linguistic shorthand, for indicating the presence of a slot and its hypothetical filler. The brackets indicate a slot, a noun or nominal slot in this case, which presumably could have been filled by *it* or *he*. The reconstructed sentences, then, would read, *It had been a charitable act*, and *He sings such songs*. Transformationalists often have to reconstruct hypothetical sentences and parts of sentences, Richard Ohmann says, "Since deletions and additions will probably have taken place in the course of the derivation /and/ the complex sentence will naturally not contain all and only all of the linguistic elements contained in the component sentences. These must be reconstructed and supplied with appropriate hypothetical elements but there is generally a strong formal motivation for reconstructing the component sentences in one way rather than another."[10]

THE FIRST rule to be applied is the relative-clause transformation, an adjective-forming transformation. Some transformationalists posit that prenominal adjectives may be ultimately derived from the reduction of the relative-clause construction. For example, the *poor* of the *poor man*, they submit, can be derived from the source sentence, *the man is poor*, where *poor* appears in predicate position.[11] Other linguists who combine transformational and taxonomic approaches, say that a phrase such as *the poor man* is not derived from any kind of sentence in which the word *poor*

[9] "The Promise of Transformational Grammar," *English Journal*, 52 (1963) 330.

[10] See note 9 in "Generative Grammars and the Concept of Literary Style," *Word*, 20 (1965) 430.

[11] For example, see Carlotta Smith, "A Class of Complex Modifiers in English," *Language*, 37 (July-September 1961) 342-365.

occurs in predicate position. Archibald A. Hill argued in a paper before the Linguistic Society of America (December 1964) that the two approaches seem to be falling together in this one respect, in that the transformationalist is accepting the notion of slots for modifiers which can occur before the noun. There is perhaps then no necessity to assume—in this paper at least—that the phrase *the poor man* is anything more than a slot with a filler in it, whereas the phrase *the man* has the same slot but has left it empty.

The relative-clause transformation involves these operations. Letters may be assigned for purposes of giving the sentences a structural description. *A*, *b*, *c*, . . . and *wh-* are again shorthand symbols which allow the linguist to combine and delete portions of sentences without resorting to a full scale representation of the sentence, thereby simplifying operations. The entire process can be visualized in the following way:

Sentence 1: (/nominal:it/ -te [a] sing such songs to a poor old man)

Sentence 2: (the man) [b] (was [c] persuaded of his own approaching death)

Transformation:[16]

a
b + c } ⟶ a + wh- + c

The arrow (⟶) in the transformational component means *becomes by structural change*. Sentence 1 has the structural description of *a*. Sentence 2, which is to be embedded into sentence 1, has the description of *b* + *c*. *B* represents *the man*, which will have in the final version the *wh-* word *who* substituted for it. Part *c* of the sentence remains as is. The combined sentences will thus read after the transformation, sentence 1 + *who* + part *c* of sentence 2. The result is

(/nominal:it/ -te sing such songs to [d] a poor old man) (who [e] was) (persuaded [f] of his own approaching death)

If the verb is a form of *be* and if the *wh-* word is the subject of its clause, then *wh* + *V* can be optionally deleted. We give *who was* a description of *e*, since *who was* is to be deleted.

Transformation: (deletion) d + e + f ⟶ d + f

There is one other relative clause with deletion in the textual sentence:

Sentence 1: (/nominal:it/ [g] had been a charitable act)

Sentence 2: (I had [h] not contemplated) [i] (the act)

Transformation:
g
h i } ⟶ g + wh- + h

Result: /nominal:it/ had been a charitable act *which* I had not contemplated.

This time, only *wh- (which)* can be deleted.

One further transformation remains, a nominalizing transformation. The nominalizing transformation in this sentence converts a sentence having the structure *NP* + *pred* into a hominal elements of the form *to* + *VP* (the *NP* is deleted). In other words, the noun slot and its filler are deleted and *to* is placed before the verb. This *crippled* version of the *NP* + *pred* pattern may then be embedded into the nominal slot of the matrix sentence. In traditional terminology this is the *infinitival nominal.*

Sentence 1: (/nominal/) [j] (had been a

k
charitable act I had not contemplated)

l *m*
Sentence 2: (/nominal/ -te) (sing such songs to a poor old man persuaded of his own approaching death)

Notice that sentence 1 has a description of *j*+*k*. Slot *j*, which is an empty slot, is to be deleted and filled by a nominal element, in this case the infinitival nominal. Sentence 2 has a description of *l*+*m*. *l* represents a nominal slot plus the tense of the verb. The transformation allows the linguist to place *to* before *sing such songs* . . . and to nest the entire construction into the nominal slot of sentence 1. The entire process can be represented

Nominalizing transformation
to + *VP*: j + k, l + m → to + m + k

The above operation would complete the processes necessary to generate the textual sentence. In summary, the transformations can be viewed as comprising the following operations:

(To sing such songs to a poor old man) = Infinitival Nominal
(persuaded of his own approaching death) = Relative clause with deletions
(had been a charitable act)
(I had not contemplated) = Relative clause with deletion

THERE ARE several advantages, both theoretical and practical, to the transformational model of representing syntax. First, it meets the test of simplicity, which, together with completeness and consistency, is one of the three basic criteria of modern linguistic science. Simplicity, however, involves more than mere readability of a grammatical model. Most would agree that transformational rules in their sophisticated and abstract form are difficult to read and understand. For the linguist, simplicity implies economy of statement. The transformationalist approach is simpler, because it reduces the number of steps needed to explain complex structure. In the gross sense, the complexity of Whitehall's sentence, using the transformationalist approach, is revealed in three steps, while the taxonomic approach takes ten steps. But these added steps are inherent in the taxonomic model, since this model incorporates an infinite set of phrase structure rules and no transformational component. The transformationalist, unlike the taxonomist, does not believe that complexity in any interesting sense can be revealed by an infinite set of phrase structure rules. What is interesting to the transformationalist is the *basic* sentences which are produced by phrase structure (simple sentence) rules and the processes which are involved in bringing phrase structure sentences together into more complex structures.

The concept of finiteness is basic to the transformational approach. If a grammatical model incorporates into its framework a finite set of rules which can be used to describe an infinite set of sentences, as contrasted to a model which has an infinite set of rules, then the first approach is simpler. For example, in the sentence under discussion, the matrix sentence could be expanded in various ways using phrase structure rules, but the complexity of the sentence would not be increased. Adverbs and adjectives can be placed before the noun *act:*

It was a charitable act
It was a beneficial charitable act
It was a very beneficial charitable act

All expansions here, theoretically, can be explained by phrase structure rules. But when other elements (constituent sentences) are either embedded or nested into the matrix sentence, complexity is increased. And this is the basic distinction to be made: the taxonomic model cannot generalize about the process of

embedding or nesting. As the transformationalists would say, "it lacks power." The transformational model can explain this complexity, and thus allow admirably economical statements about syntax, something which before the taxonomic linguist had only stumbled at.

It may be further observed that if one of the aims of language science is to reduce the number of items to be dealt with, then the transformational approach is more scientific than the taxonomic approach. Taxonomic theory assumes that each sentence is a unique event, forcing the conclusion that a taxonomic grammar would need an infinite set of phrase structure rules in order to describe all sentences. By way of contrast, the transformationalists argue that a grammar must reveal the facts of sentence-relatedness; that is, complex sentences, in the broad sense, consist of simple source sentences.

The addition of transformational rules allows a systematic description of this relatedness. Instead of having an infinite number of rules, the transformationalist holds that any sentence is a product of a finite set of phrase structure rules plus a finite set of transformational rules. Certainly one of the major weaknesses of a taxonomic model is that it has no transformational component. The taxonomic model forces the linguist to describe a sentence as if it were a linearly ordered set of words. By definition, then, the model would therefore show no relatedness among and between sentences. The taxonomic model thus forces complexity of description, whereas the transformational model reduces complexity and allows the linguist to make more concise generalizations about syntax.

Language science—and thus the models used to represent syntactic processes—has always had to justify itself on practical grounds, and whether good or bad the principle still holds. The transformational grammar is more practical than the taxonomic grammar in the classroom situation. The formulaic operations employed in transformational analysis can be of practical use when the teacher wants to explain the use of certain syntactic features, or characteristics, and hence alternative choices in expression. Whether teaching Johnny the complex business of creating relative clauses or the processes of writing sophisticated sentences, the transformational model of syntax holds immense value.